National Transportation Safety Board

FACTUAL REPORT
AVIATION

NTSB ID: LAX03FA241	Aircraft Registration Number: N37741
Occurrence Date: 07/23/2003	Most Critical Injury: Fatal
Occurrence Type: Accident	Investigated By: NTSB

Location/Time

Nearest City/Place	State	Zip Code	Local Time	Time Zone	
Waialeale,Kauai	HI	96766	0852	HST	

Airport Proximity: Off Airport/Airstrip

Distance From Landing Facility:

Aircraft Information Summary

Aircraft Manufacturer	Model/Series	Type of Aircraft
Bell	206B	Helicopter

Revenue Sightseeing Flight: Yes

Air Medical Transport Flight: No

Narrative

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

HISTORY OF FLIGHT

On July 23, 2003, about 0852 Hawaiian standard time, a Bell 206B, N37741, descended into steep downsloping terrain in the inside crater wall of the Waialeale Crater, Kauai, Hawaii. The helicopter was owned and operated by Jack Harter Helicopters, Inc., Lihue, Hawaii. The commercial certificated pilot and the four fare-paying passengers were fatally injured, and the helicopter was destroyed. A company visual flight rules (VFR) flight plan was filed and opened with the operator. Visual meteorological flight conditions (VMC) prevailed during the initial portion of the flight. Instrument meteorological conditions (IMC) existed in the vicinity of the accident site. The on-demand air taxi (commercial air tour) flight was performed under the provisions of 14 CFR Part 135 and originated from the Lihue Airport (LIH) in Kauai about 0803.

The pilot's wife indicated to the National Transportation Safety Board investigator that the day and evening preceding the accident flight had been normal. Her husband was rested upon departing for work. The operator's general manager reported that the pilot arrived at work approximately 0630, performed a preflight inspection of the accident helicopter, and departed for his first Part 135 charter flight. The flight lasted about 20 minutes, and by 0745 the pilot landed back at LIH. Thereafter, the helicopter was refueled with 39 gallons of fuel.

Four fare-paying passengers boarded the helicopter, and they departed in VMC pursuant to company procedures for the planned 60 to 65-minute-long sightseeing tour flight over Kauai. No Federal Aviation Administration (FAA) facility reported hearing any radio transmissions from the pilot following his departure from LIH.

The operator reported that the pilot was authorized to vary the route of flight according to the weather and lighting conditions he might encounter. Tour flights typically travel over the Nawiliwili Harbor and then follow the Huleia River Valley to the west. The flights then proceed to the Hanapepe Valley, the Olokele Canyon, and the Waimea Canyon. After departing the Waimea Canyon, flights continue to the west and then traverse the Puu Ka Pele Forest Reserve to reach Na Pali, which is generally traversed from the southwest to the northeast. Most flights make a 360-degree turn in the vicinity of Ke'e Beach and then continue to Lumahai Beach where the flights head inland to Mt. Namolokama. The flights then follow the Hanalei River to the ridge that separates the Hanalei and Wailua drainages and cross the ridge and travel to the "North Wall" of Mt. Waialeale. Flights that occur during "normal" weather conditions usually enter the Waialeale Crater and fly below the orographic cloud layer into and out of the valley. Flights that occur in this area when the sky is clear often fly to the summit of Mt. Waialeale using a variety of paths. Many tour flights do not enter the Waialeale Crater. Tours then return to LIH via Wailua Falls.

A review of recorded radar data indicates that until the accident occurred, the pilot's route of flight was consistent with the aforementioned tour route. After departing LIH the pilot began a

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clockwise flight route around the island. The last radio transmission made by the accident pilot, which was heard by another of Jack Harter's tour pilots, indicated the accident pilot was in the vicinity of the Waialeale Crater. Jack Harter's pilot reported that the accident pilot made a position report of "741, north wall for the top." The transmission was made on a nonrecorded air-to-air aircraft radio frequency. According to Jack Harter's general manager, the pilot's statement indicated that he anticipated flying to the top of the Waialeale Crater.

A further review of recorded radar data for the accident time period indicates the presence of one aircraft in the crater. The Safety Board investigator's review of the radar data indicates that this aircraft's flight course was consistent with that of the accident helicopter. In pertinent part, at 0850, the helicopter had climbed from 3,700 to 4,600 feet, as indicated by its Mode C transponder. At 0851:57, the helicopter had climbed to 5,000 feet, which was the highest altitude recorded during the accident flight. Thereafter, the helicopter descended. The last radar hit was at 0852:11, at which time the helicopter had descended to 4,600 feet.

The operator reported the helicopter overdue when it failed to return to LIH. The FAA and local tour operators were notified of its overdue status, and a search commenced. The wreckage was found a few hundred feet (lateral distance) from its last recorded radar position.

PERSONNEL INFORMATION

Employment.

According to the general manager of Jack Harter Helicopters, Inc., the pilot was hired on August 9, 1995. Previously, the pilot had served 15 years in the U. S. Navy as a helicopter pilot. Jack Harter Helicopters is based on Kauai, and that is where the pilot resided and performed thousands of flights. The pilot was Jack Harter's Special Federal Aviation Regulation (SFAR 71) designated instructor pilot.

The pilot had satisfactorily completed an FAA administrated "Airman Competency/Proficiency" check flight in the accident helicopter on April 3, 2003, and he was accordingly permitted to perform on-demand air taxi flights under FAR Part 135. In pertinent part, on the check flight form the FAA indicated that the pilot was limited to flying under Part 135 to daytime VFR conditions.

Certification and Currency.

The pilot held a commercial pilot certificate, with rotorcraft-helicopter and instrument helicopter ratings. The FAA reported that he had no previous accident or enforcement history.

The operator indicated that of the pilot's 13,684 total hours of flight time, 13,567 hours were flown in rotorcraft, and 8,674 hours were flown in Bell 206B helicopters. The pilot's combined actual and simulated instrument experience was 780 hours. During the preceding 90 days, 30 days, and 24-hours, the pilot had flown 292, 81, and 6.7 hours, respectively.

According to the "Flight and Duty Record" provided by the operator, the pilot's flight and duty times for the 11 days preceding the accident indicated he was off duty and did not fly on July 12 or 13. He flew a total of 27.4 hours from July 14 to 18. He did not work or fly on July 19 or 20. He flew a total of 11.5 hours from July 21 to 22. His duty hours during these periods never began earlier than 0715, nor ended later than 1800.

Pilot Professionalism.

Company management and fellow company tour pilots knew the accident pilot's competency and professionalism. The following remark was made by a coworker: "I...knew him to be a very safe and professional pilot. He wasn't one to take chances...."

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HELICOPTER INFORMATION

The helicopter, serial number 1695, was manufactured in 1975, and was equipped with an Allison (Rolls-Royce) 250-C20B engine.

The helicopter was maintained on a program of FAA required 100-hour and annual inspections. In addition, the helicopter was maintained with additional required inspections following the Bell Helicopter Maintenance Manual, Revision 2, dated June 7, 2002. These inspections were performed at 300, 600 and 1200-hour intervals.

The last annual inspection was accomplished on June 3, 2003, at a total airframe time of 18,036.1 hours. The last 100-hour inspection was performed on July 8, 2003, at a total airframe time of 18,131.1 hours, and a Hobbs meter time of 5,099.6 hours. The Hobbs meter in the accident helicopter was observed at 5,138.7 hours.

At the time of the accident, the helicopter had flown about 39.1 hours since its last 100-hour inspection. The helicopter's total airframe time in service and engine time was about 18,170.2 and 17,345.4 hours, respectively.

The helicopter was not equipped with either a gyroscopic directional heading indicator, or an artificial horizon. There was no FAA requirement for either installation in this helicopter, which was not certified for flight into IMC.

The FAA participants' "Maintenance Report" did not indicate that any discrepancies were found during its review of the helicopter's maintenance records. Required inspections had been accomplished.

The last pilot to fly the helicopter prior to the accident reported that, on July 18, 2003, he flew it for 6.8 hours. The pilot reported to the Safety Board investigator that the helicopter "performed normally at all times and there were no discrepancies noted." The most recent maintenance record found in the accident helicopter was dated July 18, 2003, and was signed by the aforementioned pilot. No discrepancies or corrective actions were listed on the maintenance form bearing number 1319, which was a sequentially issued number imprinted on the document.

The operator reported that the accident helicopter was equipped with an aural engine-out warning system horn. According to Bell Helicopters Technical Bulletin No. 206-82-71, Rev. A, dated 11/10/1982, the horn does not function until N1 decreases to 55 percent.

METEOROLOGICAL INFORMATION

The closest aviation weather observation station to the accident site is located at LIH, elevation 153 feet mean sea level (msl). The airport is about 10.2 nautical miles (nm) east-southeast (113 degrees, magnetic) of the accident site. In part, at 0853, LIH reported its surface wind was from 060 degrees at 10 knots, 10 miles visibility, scattered clouds at 2,500 feet, temperature 27 degrees Celsius, dew point 21 degrees Celsius, and altimeter setting 30.04 inches of mercury.

Meteorological Report.

A Safety Board's meteorologist reviewed the weather conditions pertinent to the accident flight. The weather conditions were compared with the helicopter's flight track, as recorded by radar. The Safety Board's Meteorological Factual Report, included with this docket, indicates the following:

1. A northeasterly low-level airflow with partly cloudy skies existed over Kauai, and the visible satellite imagery showed that clouds were present to the northeast, east, and southeast of the

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accident site in the crater; and

2. Progressive satellite images, in conjunction with the helicopter's radar track, show that as the helicopter's proximity to the accident site decreased, the band of clouds encroached the crater from the east.

Videotape and Witness Statements.

Videotape images of the weather conditions were recovered from a passenger's camera on board the accident helicopter. The videotape shows clouds in the vicinity of the accident site.

Several helicopter tour pilots who flew in or near the Waialeale Crater accident site area within a few minutes of the accident reported the presence of a few clouds in the area.

About 1/2 hour after the accident another helicopter pilot arrived in the vicinity of the crater. This pilot reported having heard the accident pilot broadcast his intention of flying to the top of the crater. This pilot recalled that he too, would "go for the top" if the weather permitted upon his arrival in the area. However, according to this pilot, he was unable to fly to the top of the crater because approaching the area he observed that it was "clouded over."

Rescue personnel reported that by 1215, lowering ceilings and inclement weather conditions precluded flight operations over the accident site.

COMMUNICATION

According to the FAA, no communications with the accident helicopter pilot were recorded after departure from LIH. All communications with the pilot were normal.

FLIGHT RECORDERS

The helicopter was not equipped with either a cockpit voice recorder or a flight data recorder. There is no FAA requirement for either recorder to have been installed.

WRECKAGE AND IMPACT INFORMATION

The accident site is located about 0.8 nm north of the highest point on Kauai, elevation 5,243 feet msl. Based upon an aerial examination of the accident scene, a ground swath was noted on steep, downsloping vegetation-covered terrain, on the northwestern inside Waialeale Crater wall. The elevation at the top of the wall, above the wreckage, is about 5,100 feet msl.

The approximate distance and magnetic bearing from the last recorded radar position to the initial point of impact (IPI) is 300 feet and 120 degrees. The approximate distance between the IPI and the main wreckage is 400 feet and 130 degrees. The approximate global positioning system (GPS) coordinates for the IPI area is 22 degrees 04.300 minutes north latitude by 159 degrees 29.783 minutes west longitude.

As indicated by statements from on-scene aircraft recovery personnel, the initial point of impact occurred below the top of the wall, and it was noted by the presence of a straight downward oriented swath in the native vegetation. The swath was a couple of feet wide. The elevation at the top of the swath was estimated at 4,700 feet msl.

The next lower elevation ground swath observed was about 4,600 feet msl. In this area evidence of fuselage fragmentation was noted. One of the components that was found near the elevation was the pitot tube. Other separated components and interior cabin items were found near and below the pitot tube, and consisted of a door, headset, rotor blade tip, and a skid. The upper portion of

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this area was about 6 feet wide and 4 inches deep. The area increased in width to about 15 feet wide toward the lower portion of the area.

The fuselage was found below this area, about 4,450 feet msl. The instrument panel was found near the fuselage. The instrument panel mounted clock was observed stopped at 0852:33. A main rotor blade was found below the fuselage in a ravine.

Recovery personnel described smelling a strong odor of fuel in the wreckage area and noted a 3-foot circle of fuel surrounding the fuselage. There was no evidence of fire.

MEDICAL AND PATHOLOGICAL INFORMATION

The FAA issued the pilot a second-class aviation medical certificate on August 14, 2002, with the restriction that he "shall wear glasses that correct for near vision."

The operator and family members reported that the pilot appeared in excellent health. He did not have any known physical disabilities.

The FAA's Bioaeronautical Sciences Research Laboratory, Civil Aeromedical Institute (CAMI), performed toxicology tests on specimens from the pilot. No evidence was found of carbon monoxide, cyanide, ethanol, or any screened drugs.

An autopsy on the pilot was performed by the Medical Examiner, County of Kauai, at the Wilcox Memorial Hospital, 3420 Kuhio Highway, Lihue, Hawaii 96766.

Safety Board personnel's review of the pilot's medical records provided by his family noted an emergency room visit for heart palpitations approximately 1 1/2 years prior to the accident. A cardiovascular evaluation performed for the FAA concluded that the palpitations were due to a normal variant heart rhythm, and the pilot was issued a medical certificate. The records also indicated a history of kidney stones, which had not been evaluated. Autopsy findings did not indicate any evidence of cardiovascular abnormalities or kidney stones.

SURVIVAL ASPECTS

The operator's tour flight departure log indicates that the accident helicopter departed LIH at 0802. The operator's general manager reported that the flight was due to return to LIH by its "scheduled" time of 0907.

According to the operator's "Flight Locating Procedures" in its Operations Manual, in the event that an aircraft does not return at its scheduled time, the following actions will, in pertinent part, be taken: Thirty minutes after scheduled return, notify the Lihue Air Traffic Control Tower; and sixty minutes after scheduled return, notify the Honolulu Flight Standards District Office (FSDO).

The operator's office manager reported that she initially notified the Honolulu FSDO between 0920 and 0925. According to the LIH "Facility Accident/Incident Notification Record," LIH received notification of the overdue aircraft at 0943.

The Kauai County Fire Department's "Incident Report" indicates that it received notification from dispatch of the overdue helicopter at 1049. The wreckage was located at 1159.

About 1215, four fatally injured persons and one critically injured person were found at the accident site. Extraction of the survivor was not immediate because the person was trapped between fuselage structure and rocks. Also, deteriorating weather conditions prevented an immediate rescue. The passenger expired on scene at 1424.

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TESTS AND RESEARCH

Airframe Examination.

The Safety Board investigation team examined the recovered wreckage following its recovery to LIH and thereafter between September 2 and 4, 2003. (See the Safety Board's "Wreckage Examination" report.) The Bell Helicopter participant reported that the fuselage sustained major impact damage. The damage observed was consistent with the helicopter impacting terrain with substantial forward velocity. Based upon the deformation signatures, the impact energy was from the right front to the left rear.

The crew and passenger compartments were fragmented into multiple pieces. The nose compartment separated and was also fragmented into pieces. The cockpit area was destroyed. All of the broken control components were found with fracture surfaces having visible shear lips that appeared to be related to an impact/overload event.

The fuel cutoff switch was found in the "ON" position. No evidence of preimpact anomalies or lack of control system continuity was noted.

The tail boom sustained substantial impact damage and was broken into at least 3 sections. The tailskid had scrape marks on it and appeared to be bent in an upward direction. The tail rotor control head, blades, and control assembly appeared undamaged. The controls remained connected and moved freely. When the control tube inside the tail boom was moved there was a corresponding movement of the tail rotor blades. The tail rotor blades rotated freely without any binding, and they did not exhibit chordwise scoring signatures. There was no apparent damage to the blades' leading edges.

The pitch change links were not bent and were free from binding. The tail rotor gearbox chip detector was devoid of contaminants.

The number 6 drive shaft section was found pulled out of the forward coupling, and it did not display any damage or circumferential scoring. The bearing hangers were fractured in overload and there were no signatures indicating rotation.

The transmission and main drive system sustained impact damage. The main transmission magnetic plugs were found devoid of contaminants. Prior to the removal of the engine, the main rotor was turned and drive continuity was confirmed through the transmission. There was no circumferential scoring from the flailing of the drive shaft. No anomalies were found with the transmission or the main drive system.

The fuel system's bladder, boost pumps, fuel quantity gauges and sending units, lines, filler cap, and the shutoff valve were examined. No evidence of anomalies was observed. The low rotor RPM horn was functionally tested. The horn worked.

The main rotor hub and blade assembly were heavily damaged from impact forces. The pitch change links were fractured in overload. Both main-rotor blades were fractured into pieces and displayed signatures consistent with overload (fracture was in an upward bending direction). Both main rotor blades fractured just outboard of the doublers, about 3 feet outboard from their respective retention bolts. The outboard 31-inch-long portion of one blade was found severed.

The center sections of the blades displayed light chordwise wrinkling throughout the span of the blade. There were few chordwise signatures on the blades, and neither blade exhibited pronounced leading edge damage. The mast, swashplate and transmission assemblies were intact. At the conclusion of the structural examinations, the Bell participant reported that no airframe anomalies

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were identified.

Engine and Component Examination.

The Safety Board investigation team examined the engine following its recovery to LIH, and again during a teardown inspection performed in Oakland, California. The engine participant from Rolls-Royce reported that the engine assembly sustained deformation signatures consistent with ground impact forces at the aft end of the outer combustion case and air discharge tubes. The impact forces also distorted several air and fuel lines leading to the fuel control and power turbine governor unit. No evidence of preimpact looseness to B-nut fittings or line separation was observed. There was no evidence of a post crash fire.

In part, the following observations were noted during the on-scene examination:
1. The fuel nozzle inlet line was found empty of fuel.
2. The engine fuel filter was found full of fuel.
3. The fuel nozzle screen was found devoid of debris and it was not collapsed.
4. Both engine gearbox magnetic indicating plugs were found clean of material.

In part, the following observations were noted during the teardown examination:
1. The compressor to turbine shaft coupling had witness marks on the turbine end.
2. The compressor rotated when the turbine was removed.
3. The turbine rotated freely when the compressor was removed.
4. No mechanical anomalies were noted.
5. All wheels, couplings, and gears were found intact.
6. All controls were bench tested and found to be within limits.

The Rolls-Royce participant indicated following completion of the maintenance records review that "all maintenance records appeared in order." For additional details of the engine and airframe records review, see the Rolls-Royce and the FAA participants' reports included in the docket for this investigation.

Video/Image Examination.

A digital-8 format videotape recording was found in the wreckage. A family member of one of the passengers reported to the Safety Board investigator that the videotape likely belongs to their relative. The videotape was examined by the Safety Board's Vehicle Recorder Division, which prepared a factual report regarding its content. The videotape was found to have recorded the majority of the accident flight. The accident sequence at the end of the flight was not recorded.

Based upon the video images, the video camera operator appeared to be seated in the right rear of the helicopter, and the views were primarily out the right rear window. The helicopter's instrument panel was not visible at any time. The audio track consisted of wind noise and engine, transmission, and rotor noises exclusively. No voices or conversation are evident during the flight.

The video provides views of landscape, generally mountains, waterfalls, coastlines and bays. As the helicopter proceeded on the island tour, there was no initial indication of inclement weather. The sky condition varied from clear to broken cloud layers. At times, clouds obscured the view of mountain ridgelines. The helicopter remained below and clear of clouds throughout virtually all of the flight. Near the end of the recording the helicopter appeared to briefly fly slightly above the lowest elevation clouds, and at times portions of the horizon were obscured by clouds. The recording ends as the helicopter was flying over a valley in the vicinity of a ridgeline, and clouds were apparent near the helicopter.

Portions of the videotape's audio track were provided to a Safety Board sound spectrum analyst for

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review of any relevant data. Additionally, several still images were extracted from the videotape and provided to the Safety Board's Aircraft Performance Group for their review.

Sound Spectrum Study.

The Safety Board's sound spectrum analyst examined the audio track from the passenger's videotape. Sound signatures were identified on the audio recording, which was damaged, that corresponded to the rotational frequencies of the "gas producing" N1 compressor of the engine, the engine drive shaft or power turbine rotation, and the main rotor rotation. The frequency data was plotted on charts, and the last couple of minutes of the recording were analyzed.

The analyst reported that the engine and rotor system sounds appeared normal during the first part of the examination. The trace corresponding to the engine's N1 sound signature and the trace identified as coming from the rotor system were generally steady and were consistent with the images recorded on the video. Generally, the video showed that the helicopter was in forward flight and was climbing. The main rotor was generally steady at about 100 percent rpm and the engine N1 speed was approximately 95.5 percent rpm.

About 70 seconds before the end of the recording (about 290 seconds elapsed time in the report), the engine speed can be seen to increase. This increase in engine speed is accompanied by a steady decrease in rotor rpm. The rotor rpm continues to decrease and reaches a low of about 95 percent when the recording ends. The engine speed during this time appears to be very erratic. The final measured speed of the engine was about 92 percent N1.

According to the Bell helicopter's manufacturer, the helicopter is equipped with both aural engine-out and low rotor rpm warning systems. The engine out warning system consists of a tone generator with a designed frequency of 3,050 Hz that is pulsed at a 5 pulse per second rate. The low rotor rpm warning system consists of a tone generator that generates a steady aural tone of 2,890 Hz. Neither of these tones was observed during the last few minutes of the recovered recording. For additional details, see the "Specialist's Report of Investigation Sound Spectrum Study," included in the docket.

Performance Study.

In follow up to the tests and examinations, a Safety Board aerospace engineer and helicopter pilot undertook a "Performance Study." The engineer and pilot reviewed the sound spectrum data, and they also compared the flight path videotape with the helicopter's radar track. The radar track was derived from data received from the FAA's Honolulu Center Radar Approach Control, US Navy Fleet Air Support and Control Facility (FASCFAC), and the US Air Force 84th Radar Evaluation Squadron (RADES).

Following the Safety Board's helicopter performance specialists' viewing of the image-enhanced videotape and photographic wreckage evidence, and after integrating this information with the radar data, the specialists provided the following statements regarding the accident helicopter's flight stability, proximity to clouds, and route of flight:

The helicopter's groundspeed plot indicates that the helicopter crossed the PohaKupele ridgeline traveling about 100 knots. As the helicopter traversed and maneuvered through the crater, the ground speed decreased to 50 knots. As the helicopter approached the western cliff face, the groundspeed dropped between 30 and 40 knots during the initial portion of the final 60 seconds of radar data, and the very last 11 seconds displayed a rapid decrease to 5 knots groundspeed. The vertical speed plot displayed a steady rate of climb between 700 and 900 feet per minute during the traverse across the center of the crater, and decreased between 200 and 300 feet per minute during the final 60 seconds of radar data. The last 11 seconds of radar data initially indicated a zero vertical speed and then it rapidly increased to 2,000 feet per minute rate of descent by the end of

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the data.

Additionally, the Safety Board's helicopter specialists reported the following findings:

1. Based upon the helicopter's calculated weight, the ambient weather, and the manufacturer's performance charts, the helicopter was found within its authorized weight and balance limitations, and it was capable of hovering out of ground effect at 5,000 feet.
2. Upon reviewing the videotape, no evidence was observed of aggressive or rapid changes in altitude or maneuvering at bank angles that exceeded 30 degrees.
3. The helicopter approached the Waialeale Crater from below the ridgeline and at a low ground speed (below 40 knots).
4. Cloud formations were observed during the video recordings below the crater ridge and along the ridgeline.
5. During the last minute of flight, along the Waialeale ridgeline, the helicopter was operated with the cloud bases below the altitude of the helicopter, and cloud formations obscured the ridgeline and the crater terrain.
6. Cloud formations around the Waialeale ridgeline were less than 1 mile, laterally, from the helicopter.
7. The initial point of impact is in close proximity to where the helicopter was located when the video recording stopped.
8. The video recording stopped 8 to 9 seconds before the last radar return.
9. The rate of descent approached 2,000 feet per minute during the last 11 seconds of radar data.
10. The helicopter's attitude was between 45 and 62 degrees nose down when it impacted the terrain.

See the "Performance Study" for additional details and supporting documentation. It is included in the public docket for this accident.

ADDITIONAL INFORMATION

Company Information and Operations Specifications.

The operator's general manager reported that since commencing business in 1976, the company has increased in size. About 15 full-time and part-time personnel were employed, and the company was authorized to operate a maximum of four helicopters, including two Bell 206 Helicopters and two American Eurocopters. Air taxi tour flights were available to the public 7 days per week and 363 days per year. The company contracted for its maintenance.

The FAA issued Jack Harter Helicopters, Inc., air carrier certificate number DCGA136D, which authorizes on demand passenger and cargo operations in helicopters. The operations are to be conducted only in VFR weather and during the daytime.

Regarding flight operations and flight locating procedures, the Operational Control section of the company's Operations Specifications placed the following requirements on the company: "The designated office/company person must be present at the principal base of operations until the aircraft has returned from that local flight and must be familiar with the flight locating requirements of the company's operating procedures document."

Tour Route Information.

The operator reported that its most popular tour flight lasted between 60 and 65 minutes and was called the "60 to 65 minute" tour. One of the viewable sights advertised by the operator included the Mt. Waialeale area, including the Waialeale Crater.

Transponder Equipment and Usage.

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In the operator's FAA approved "Operations Specifications," the FAA required that the helicopter's Mode C (altitude reporting) transponder be operated with the Mode C function turned on during flight. The operator was not required by the FAA to use the transponder with a specific (discrete) transponder code that would specifically identify the helicopter to air traffic control facilities.

Cloud Clearance and Visibility Requirements.

When flying en route, the Operations Specifications state the following: "On overland transition segments, no flight will be conducted in Class G airspace where the flight visibility is less than 3 statute miles." (The accident site area is located in Class G airspace.) Also, "no flight will be conducted closer than 300 feet above, below, or horizontally from any cloud."

Terrain Proximity and Flight Path.

As evident from the helicopter's radar track, videotape, and topographic charts, during the last minute of recorded flight the helicopter was located over or within a few hundred feet southeast of the 5,100-foot msl top of the crater's rim. The bottom of the crater was located further southeast of the helicopter and was about 3,000 feet lower in elevation.

Within the last 14 seconds of radar-recorded flight, from 0851:57 to 0852:11, the helicopter descended 400 feet from its 5,000-foot maximum elevation to its 4,600-foot lowest elevation. Also during this time, the helicopter's radar position (latitude and longitude coordinates) remained about the same.

Wreckage Release.

All recovered wreckage was released to the owner's assigned insurance adjuster. No parts or original operator records were retained.

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Landing Facility/Approach Information

Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
		Ft. MSL	NA		

Runway Surface Type:

Runway Surface Condition:

Approach/Arrival Flown: NONE

VFR Approach/Landing: None

Aircraft Information

Aircraft Manufacturer	Model/Series	Serial Number
Bell	206B	1695

Airworthiness Certificate(s): Normal

Landing Gear Type: Skid

Amateur Built Acft?	Number of Seats:	Certified Max Gross Wt.	Number of Engines:
No	5	3200 LBS	1

Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:
Turbo Shaft	Allison	250-C20B	400 HP

- Aircraft Inspection Information

Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time
100 Hour	07/2003	39 Hours	18170 Hours

- Emergency Locator Transmitter (ELT) Information

ELT Installed?/Type	ELT Operated?	ELT Aided in Locating Accident Site?
No		

Owner/Operator Information

Registered Aircraft Owner	Street Address	City	State	Zip Code
Jack Harter Helicopters, Inc.	P.O. Box 306	Lihue, Kauai	HI	96766

Operator of Aircraft	Street Address	City	State	Zip Code
Jack Harter Helicopters, Inc.	P.O. Box 306	Lihue, Kauai	HI	96766

Operator Does Business As:

Operator Designator Code: DCGA

- Type of U.S. Certificate(s) Held:

Air Carrier Operating Certificate(s): On-demand Air Taxi

Operating Certificate:

Operator Certificate:

Regulation Flight Conducted Under: Part 135: Air Taxi & Commuter

Type of Flight Operation Conducted: Non-scheduled; Domestic; Passenger Only

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First Pilot Information

Name	City	State	Date of Birth	Age
On File	On File	On File	On File	44

Sex: M | Seat Occupied: Right | Occupational Pilot? | Certificate Number: On File

Certificate(s): Commercial

Airplane Rating(s): None

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Helicopter

Instructor Rating(s): None

Current Biennial Flight Review? 04/2003

Medical Cert.: Class 2 | Medical Cert. Status: Valid Medical--w/ waivers/lim. | Date of Last Medical Exam: 08/2002

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Mult-Engine	Night	Instrument Actual	Instrument Simulated	Rotorcraft	Glider	Lighter Than Air
Total Time	13684	8674	117		800	600	200	13567		
Pilot In Command(PIC)		8674						13567		
Instructor										
Instruction Received										
Last 90 Days	292	62						292		
Last 30 Days	81	25						81		
Last 24 Hours	7	1						7		

Seatbelt Used? Yes | Shoulder Harness Used? N/A | Toxicology Performed? Yes | Second Pilot? No

Flight Plan/Itinerary

Type of Flight Plan Filed: Company VFR

Departure Point	State	Airport Identifier	Departure Time	Time Zone
Lihue, Kauai	HI	LIH	0803	HST

Destination	State	Airport Identifier
Local Flight		LIH

Type of Clearance: None

Type of Airspace:

Weather Information

Source of Wx Information:

Unknown

National Transportation Safety Board

FACTUAL REPORT AVIATION

NTSB ID: LAX03FA241

Occurrence Date: 07/23/2003

Occurrence Type: Accident

Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
LIH	0853	HST	153 Ft. MSL	10 NM	113 Deg. Mag.

Sky/Lowest Cloud Condition: Scattered 2500 Ft. AGL

Condition of Light: Day

Lowest Ceiling: None Ft. AGL

Visibility: 10 SM

Altimeter: 30.04 "Hg

Temperature: 27 °C

Dew Point: 21 °C

Weather Conditions at Accident Site: Instrument Conditions

Wind Direction: 60

Wind Speed: 10

Wind Gusts:

Visibility (RVR): Ft.

Visibility (RVV) SM

Precip and/or Obscuration:

No Obscuration; No Precipitation

Accident Information

Aircraft Damage: Destroyed

Aircraft Fire: None

Aircraft Explosion None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	4				4
- TOTAL ABOARD -	5				5
Other Ground					
- GRAND TOTAL -	5				5

National Transportation Safety Board

FACTUAL REPORT
AVIATION

NTSB ID: LAX03FA241

Occurrence Date: 07/23/2003

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Wayne Pollack

Additional Persons Participating in This Accident/Incident Investigation:

Eric West
Federal Aviation Administration, AAI-100
Washington, DC

Harold Barrentine
Bell Helicopter
Fort Worth, TX

Robert Ketchum
Rolls-Royce
Indianapolis, IN

Casy Riemer
Jack Harter Helicopters, Inc.
Lihue, HI